

AMENDED CLAIMS

Claims 1.-3. (Canceled)

Claim 4. (Amended) The modular robotic system [part processor] of claim 3 28 wherein said structural member is an extruded part, and fastening members holding said slide rail to said structural member.

Claims 5.-8. (Canceled)

Claim 9. (Amended) The modular robotic system of claim 17 28 wherein said machine part is a rake, a tray, or a gripper.

Claims 10.-17. (Canceled)

Claim 18. (Amended) The modular robotic system of claim 17 28 and including a series of modular units formed into the system, one modular unit including a first actuator and its rod, a second modular unit including a second actuator and its rod, the rod of the first actuator moving in a first lineal axis, and the rod of the second actuator moving in a second lineal axis perpendicular to said first axis, said second modular unit being operatively connected to said first said actuator and its rod to be moved ~~in~~ along said first axis, and said second actuator and its rod moving said parts in the direction of the second lineal axis, whereby controlled movement by said first and second actuator rods by their respective dedicated controllers ~~the controller moves said at least one part parts~~ in at least two axes.

Claim 19. (Amended) The modular robotic system of claim 17 28 wherein a series of modular units are formed into the system, ~~that~~ the first modular unit including a first actuator and rod, a second modular unit including a second actuator and rod, and a third modular unit including a third actuator and rod, said second modular unit operatively mounted to said first modular unit, said second modular unit being operatively mounted upon said first modular unit slide, said third modular unit operatively mounted to said second modular unit, the third modular unit being operatively mounted upon the slide of said second modular unit, the rod of the first actuator of the first modular unit moving in a first axis, the

actuator and the rod of the second modular unit moving in a second axis perpendicular to said first axis, said first and second ~~axis~~ axes of movement of the rods defining a first plane, and the rod of the third actuator of the third modular unit moving in a third axis in a plane off set from said first plane, said second modular unit operatively connected to said first actuator rod to be moved in said first axis, said third modular unit operatively connected to said second actuator rod to be moved in said second axis, and said machine part being operatively connected upon the slide of ~~to~~ said third modular unit and its third actuator rod, whereby controlled movement of said first, second and third actuator rods respectively by said dedicated controllers ~~controller~~ moves said machine part in at least three axes.

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Claim 20. (Previously added) The modular robotic system of claim ~~19~~⁵ wherein said machine part is connected to said third actuator rod, and the machine part slides perpendicular in a feed direction for the parts being processed by the third modular unit.

Claim 21. (Amended) The modular robotic system of claim ~~20~~³ wherein said rake incorporating a plurality of pockets, each pocket shaped to receive a part to be processed, said rake indexed forwardly until each pocket is disposed a predetermined distance to receive a part, and said third modular unit moving said rake forwardly to dispose each part for further processing.

Claim 22. (Amended) A modular robotic system of claim ~~21~~³ wherein said parts are picked up and placed by said gripper for further processing by the system.

Claim 23. (Amended) The modular robotic system of claim ~~17~~¹ 28 and including said modular unit being embodied within an open case, and said open case being formed of additional structural members.

Claim 24. (Amended) The modular robotic system of claim ~~17~~¹ 28 wherein there are a pair of said structural members in each modular unit, each pair of structural members being arranged parallel, and an end member connecting between each pair of structural members to secure the structural

members together, there being a one of said slide rail mounted on each said structural member, and said slide matingly slidable along each slide ~~rail~~ rails, said actuator mounted to an end member, and providing for its rod to move said slides during parts processing.

Claim 25. (Previously added) The modular robotic system of claim ¹⁰ ~~24~~ wherein there are a pair of modular units in the robotic modular system, each of the modular units having an actuator and its rod connected thereto, a second modular unit mounting onto the first modular unit provided for being indexed by the operations of the first actuator.

Claim 26. (Previously added) The modular robotic system of claim ¹¹ ~~25~~ and including a plate connecting onto the slides of the first modular unit, the plate expanding between and connecting to said slides of said first modular unit, said second modular unit mounted onto said plate for linear movement by the actuator rod of said actuator of the first modular unit.

Claim 27. (Previously Added) The modular robotic system of claim ¹² ~~26~~ including said second modular unit having a pair of spaced apart parallel structures, end members provided at each end of the pair of structural members to secure the structural members together, there being a slide rail mounted upon each of the pair of structural members provided in the second modular unit, an actuator mounted onto one of said end members, its rod connecting to the second modular unit slides, to provide for their movement in a different linear direction.

Claim 28. (Newly added) The modular robotic system comprising a parts processor for assembling, testing, and/or packaging of at least one part comprising;

a modular system including one or more modular units, each modular unit comprising:

at least one structural member;

at least one actuator mounted to said at least one modular unit, said actuator having a body and a rod which is extendable and retractable relative to said body;

a controller dedicated to and connecting with said actuator to control the extension and retraction of said actuator rod, to be moved to multiple precise stops with programmed acceleration and velocity, the actuator being a servo-controlled actuator, said actuator including said dedicated controller, and said controller including a dedicated controller and a control system in communication with said dedicated controller, said dedicated controller activating said servo-actuator to extend and retract said actuator rod of said actuator in response to signals received from said control system;

said structural member including a plurality of faces, a groove in at least one of said faces, said groove is generally T-shaped, said groove including a base portion and a narrower neck portion extending from said base portion to said face, and a hole extending at least partially through said structural member;

at least one slide rail mounted on each said structural member; said slide rail being shaped to partially mount within said structural member groove;

a slide, said slide having a lower groove provided within its lower surface to accommodate the upper segment of the slide rail for a sliding engagement therein, said slide matingly slidably along said slide rail, the actuator rod being operatively connected to said slide to move said slide along said slide rail; and

whereby any part during processing moved along with said slide by operation of said actuator and its rod for further processing of a part.